



# MTEP13 PowerBase Development

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November 27, 2012

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# Introduction

- MISO presented information on the MTEP13 PowerBase development at the October 23<sup>rd</sup> Planning Advisory Committee (PAC) meeting
- The full presentation can be found at:  
<https://www.midwestiso.org/Events/Pages/PAC20121023.aspx>
- Today I will review the MISO information and present ATC's understanding of the new process
- Much of the information presented here is taken directly from October 23<sup>rd</sup> MISO presentation



# New MISO Process Proposal

- Utilize same vintage PowerBase models for EGEAS and PROMOD work
- Stagger PowerBase development to get it off the critical path of the economic studies timeline, and eliminate about 2 months of annual rework that yields minimal value; while maintaining the same model quality.

EGEAS – Electric Generation Expansion Analysis System

Information modified from MISO's October 23, 2012 – Planning Advisory Committee presentation

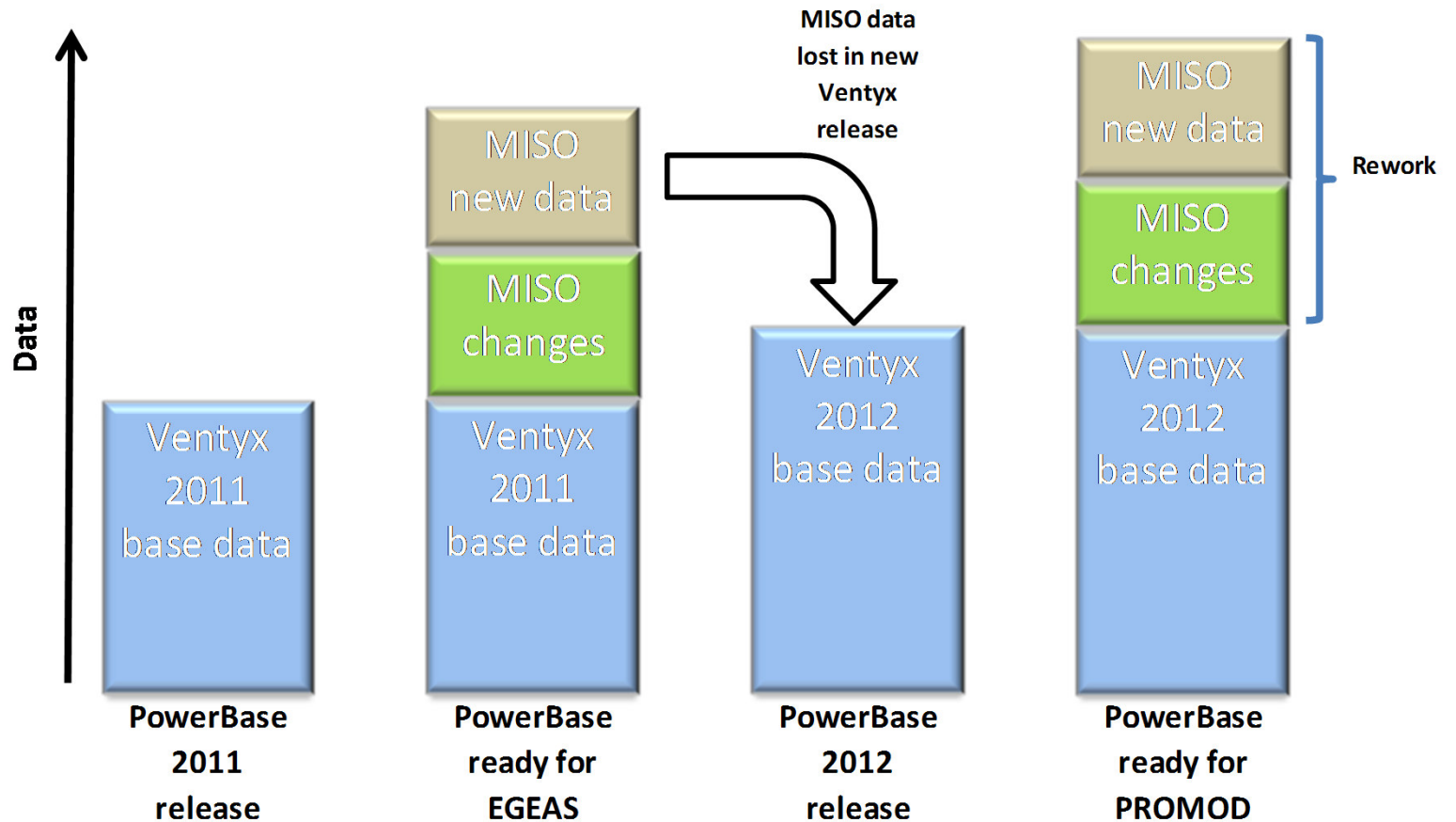


## Issue

- **In the current MISO process, PowerBase databases with different vintages are used for EGEAS and PROMOD analyses in the same MTEP.**
  - EGEAS results feed into PROMOD
- **This causes MISO to update two different starting databases to effectively reach the same end point**
- **Redundant work performed costs about 2 months of MISO staff time on an annual basis**
  - That translates to around \$55 – \$60k for MISO
- **PowerBase development is on the critical path of MTEP economic studies**
  - Significant effort to meet timelines; potential schedule risk

Information modified from MISO's October 23, 2012 – Planning Advisory Committee presentation

# Current MISO Process – Updates



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# MISO Data Updates

- **MISO specific data added to the Ventyx default Powerbase includes:**
  - Commercial Model Updates
  - MISO & External Queued Generation Updates
  - Module E Data (Plan to Update for EGEAS)
    - Demand & Energy
    - Industrial Loads
    - Interruptible Loads
    - Direct Control Load Management (DCLM)
    - Behind-the-Meter (BTM) Generation
  - Unit Retirement
  - Load, Wind & Solar Hourly Profiles
  - Joint Owned Unit
  - Emission Data

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## Example of MISO Additions

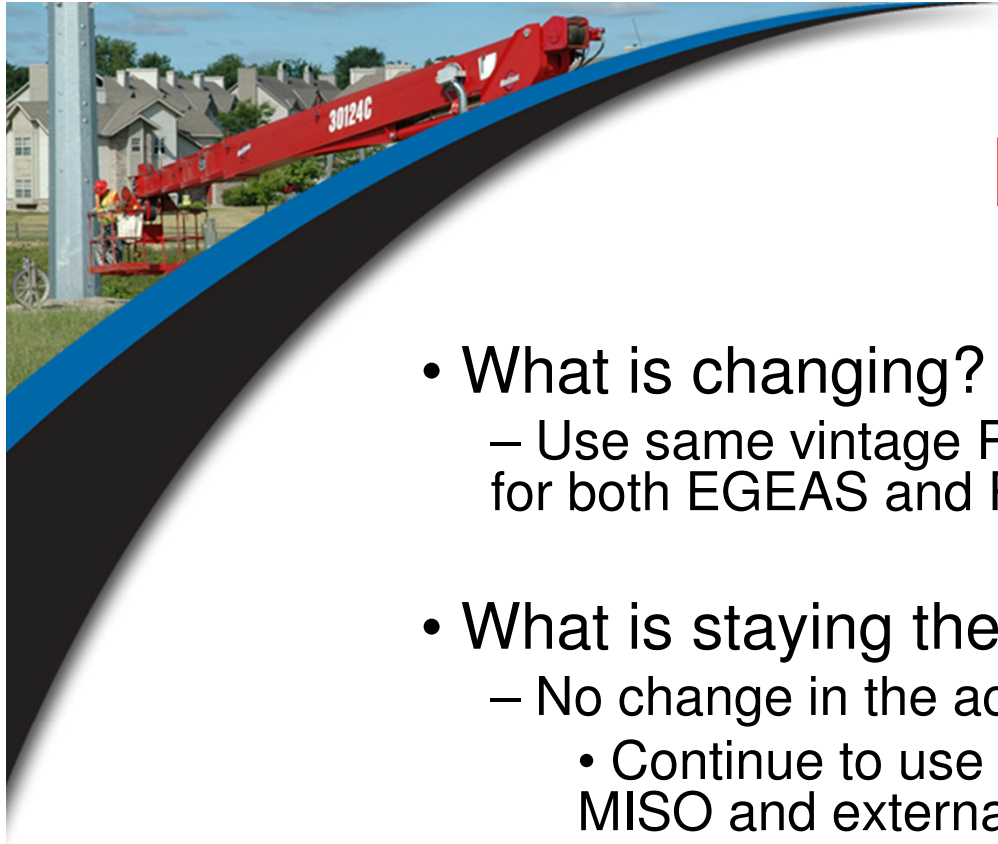
- MISO updates the PowerBase to incorporate more accurate information and align it with MISO modeling and study practices.
- For example, based on data from the MISO generator interconnection queue, commercial model, and Module E MISO added/removed over 25 GW of generation

Data Source	MW Added	MW Removed	MW Altered
Generation Queue	4,500	3,100	7,600
Commercial Model	4,300	2,200	6,500
Behind-the-Meter	1,600	0	1,600
Interruptible Load/DCLM	5,000	4,500	9,500

**Note:** Values are rounded

DCLM – Direct Control Load management

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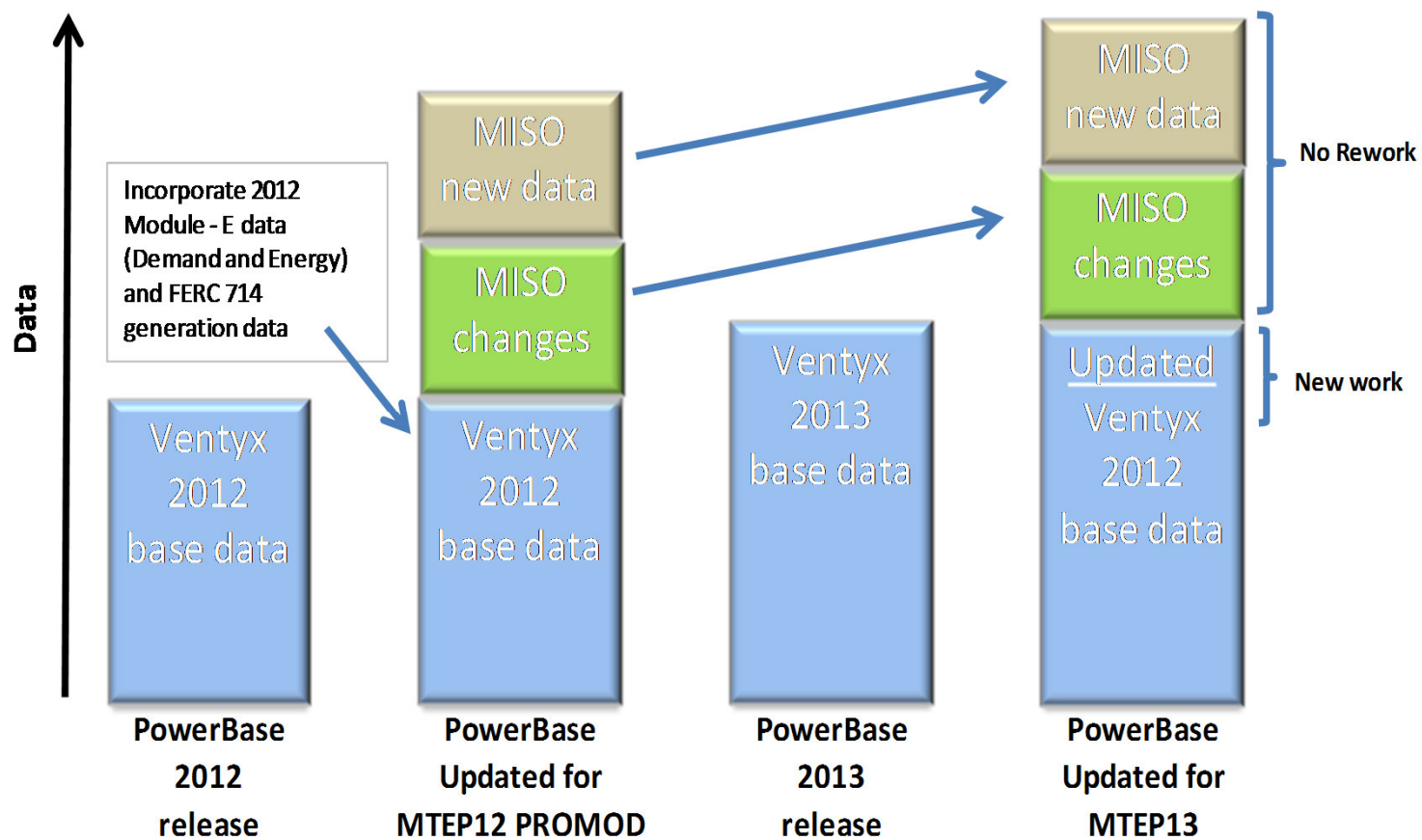
# MISO Proposed Process

- What is changing?
  - Use same vintage PowerBase updated once annually for both EGEAS and PROMOD
- What is staying the same?
  - No change in the actual data being updated
    - Continue to use latest available information for MISO and externals (from Ventyx)
  - Continue using latest available powerflow models
  - Same level of stakeholder engagement, including review and feedback as current process

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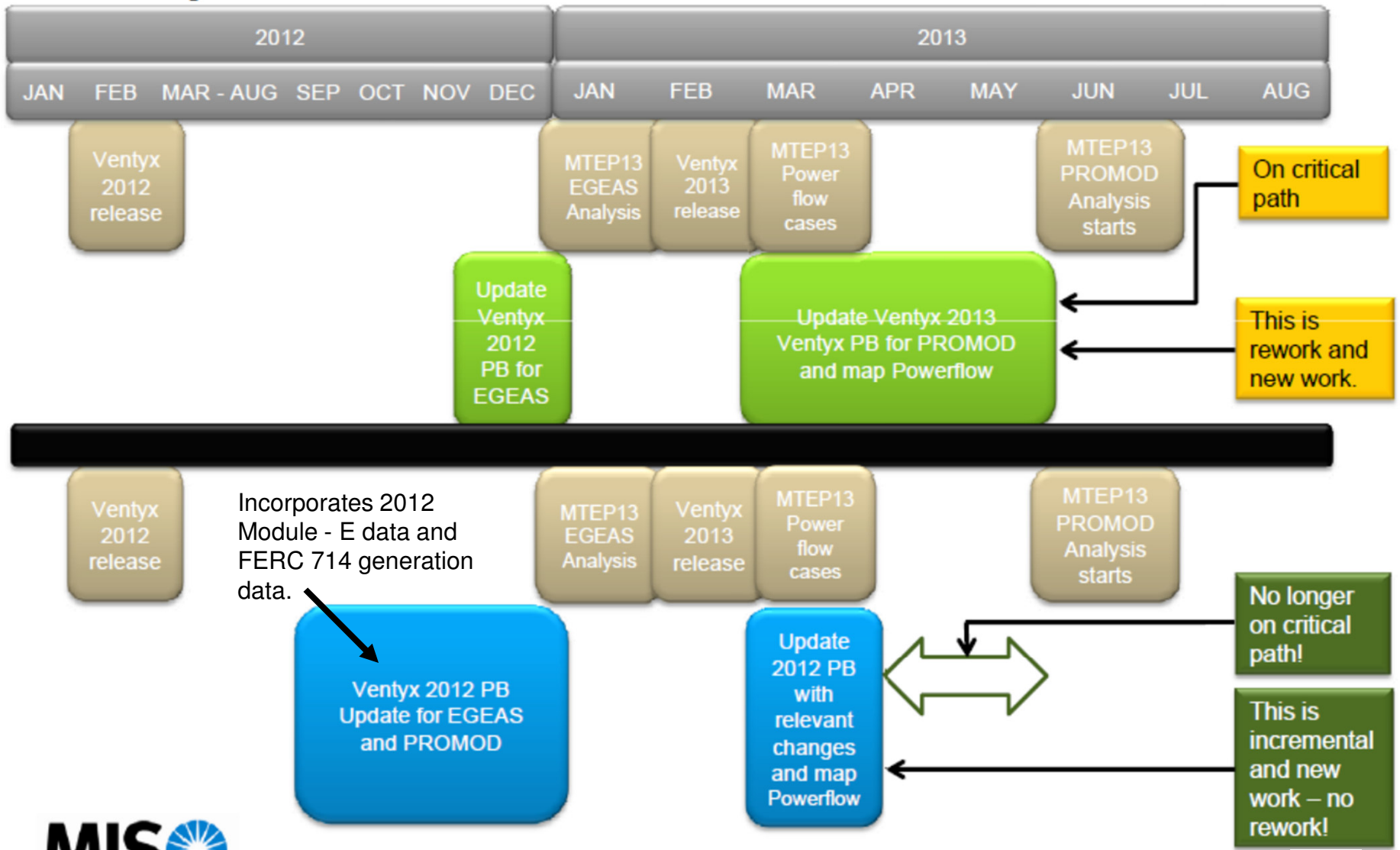
# New MISO Process - Updates



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Milestones Old Process New Process

# Comparison of Timelines





# Benefits

- Eliminates redundant work for MISO
  - Adopting a new Ventyx release requires ~2.5x more work than incrementally updating a previous version
  - Will save MISO about 2 months of staff time every year
- Removes PowerBase development from the critical path for economic studies
- Capacity forecast (EGEAS) analysis and production cost analysis (PROMOD) use same model
- Still achieves same model quality of previous process

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# Ventyx Updates

- **MISO data is largely available from MISO sources**
- **Ventyx is primarily used as starting point for external data**
  - Coordination with neighbors also provides updated external data
- **Data which potentially may change every year:**
  - Fuel Forecasts
  - Demand & Energy
  - New Generation
  - Generator (Future) Retirement Date
  - Generator Variable and Fixed O&M
  - Generator Emission Rates
- **To the extent changes in Ventyx newer release are pertinent, those will be included**
  - PowerBase available in February every year

Information modified from MISO's October 23, 2012 – Planning Advisory Committee presentation



## Summary and Future Work

- Proposed MISO process will ensure consistency between PowerBase models for EGEAS and PROMOD
- MISO Rework will be eliminated without losing model quality
- There is no change in the actual data being updated – will continue to use latest available information
- MISO is looking at the impacts of moving to a biennial update – start from a newer Ventyx release every other year, instead of annually.

Information modified from MISO's October 23, 2012 – Planning Advisory Committee presentation



## Questions?

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